

WHAT IS CLAIMED IS:

1. A duplexer dielectric filter, comprising:

a dielectric block having an upper surface, a lower  
5 surface, and a side surface, with a conductive material coated  
on at least a part of the lower and side surfaces;

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a first filtering area for filtering first signals, said  
first filtering area including at least one resonator having a  
resonating hole, said resonating hole completely extending  
10 from the upper surface to the lower surface of said dielectric  
block and being at least partially coated with a conductive  
material on <sup>the</sup>its internal surface; <sup>throat</sup>

a second filtering area for filtering second signals,  
said second filtering area including at least one resonator  
15 having a resonating hole, said resonating hole completely  
extending from the upper surface to the lower surface of said  
dielectric block and being at least partially coated with a  
conductive material on <sup>the</sup>its internal surface; <sup>throat</sup>

reception and transmission terminals for accomplishing  
20 signal reception and transmission operation, said reception  
and transmission <sup>a</sup>terminals respectively comprising an  
electrode area insulated from the conductive material coated  
on the side surface of the dielectric block;

an antenna terminal arranged between said first and  
25 second filtering areas and comprising an electrode area

insulated from the conductive material coated on the side surface of the dielectric block; and

a first open area <sup>disposed</sup> formed on at least a part of said side surface of the dielectric block at a position corresponding to the first filtering area while being free from a conductive material, said first open area controlling both a coupling capacitance and a loading capacitance of the resonators.

*which ones?*

2. The duplexer dielectric filter according to claim 1, wherein said reception terminal, transmission terminal and antenna terminal are insulated from the conductive material <sup>disposed</sup> formed on the side surface of the dielectric block by a second open area.

3. The duplexer dielectric filter according to claim 1, wherein said coupling capacitance and loading capacitance of the resonators are changed in accordance with a size of said first open area.

4. The duplexer dielectric filter according to claim 2, wherein said first and second open areas are integrated with each other.

5. The duplexer dielectric filter according to claim 2, wherein said first and second open areas are isolated from

each other.

6. The duplexer dielectric filter according to claim 1,  
wherein <sup>disposed</sup> two or more resonators are formed in the first  
filtering area of the dielectric block, with a plurality of  
first open areas being formed on the side surface of the  
dielectric block at positions corresponding to said resonators  
within the first filtering area.

7. The duplexer dielectric filter according to claim 1,  
further comprising at least one conductive pattern, said  
conductive pattern being <sup>disposed</sup> formed on said dielectric block  
within the first open area, with a capacitance <sup>provided</sup> formed between  
said conductive pattern and the resonating hole of the first  
filtering area, thus forming an attenuation pole.

8. The duplexer dielectric filter according to claim 7,  
wherein said conductive pattern is <sup>disposed</sup> formed along the resonating  
hole within the first filtering area.

9. The duplexer dielectric filter according to claim 7,  
wherein said capacitance is changed in accordance with a  
length of said conductive pattern corresponding to the  
resonating hole within the first filtering area.

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10. The duplexer dielectric filter according to claim 7, wherein said capacitance is changed in accordance with a distance between said conductive pattern and said resonating hole within the first filtering area. *which one*

5 11. A duplexer dielectric filter, comprising:

*a* dielectric block having an upper surface, a lower surface, and a side surface, with a conductive material coated on at least a part of said lower and side surfaces;

10 a series of resonating holes completely and parallelly extending from the upper surface to the lower surface of said dielectric block and at least partially coated with a conductive material on their internal surfaces, *thus* forming resonators; *defining*

15 reception and transmission terminals respectively comprising an electrode area insulated from the conductive material coated on the side surface of the dielectric block, said reception and transmission terminals being electromagnetically coupled to said resonators; and *which was*

20 an open area comprising at least one area formed on at least a part of said side surface of the dielectric block while being free from a conductive material, said open area controlling both a coupling capacitance and a loading capacitance of the resonators. *disposed*

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12. A duplexer dielectric filter, comprising:

a dielectric block having an upper surface, a lower surface, and a side surface, with a conductive material coated on at least a part of the lower and side surfaces;

5 a reception area for filtering a received signal, said reception area comprising at least one resonator including a resonating hole, said resonating hole completely extending from the upper surface to the lower surface of said dielectric block while being at least partially coated with a conductive material on <sup>the</sup> its internal surface <sup>thereof</sup>;

10 a transmission area for filtering a signal to be transmitted, said transmission area comprising at least one resonator including a resonating hole, said resonating hole completely extending from the upper surface to the lower surface of said dielectric block while being at least partially coated with a conductive material on its internal surface;

20 a transmission terminal for accomplishing a signal transmission operation, said transmission terminal comprising an electrode area <sup>disposed</sup> formed on the upper and side surfaces of the dielectric block at a position corresponding to the transmission area while being insulated from the conductive material coated on the side surface of the dielectric block;

25 a reception terminal for accomplishing a signal reception operation, said reception terminal comprising an electrode

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area <sup>disposed</sup> formed on the upper and side surfaces of the dielectric block at a position corresponding to the reception area while being insulated from the conductive material coated on the side surface of the dielectric block;

5 an antenna terminal arranged between said reception and transmission areas and comprising an electrode area insulated from the conductive material coated on the side surface of the dielectric block; and <sup>disposed</sup>

10 an open area <sup>disposed</sup> formed on at least a part of said side surface of the dielectric block at a position corresponding to the reception area while being free from a conductive material, said open area controlling both a coupling capacitance and a loading capacitance of the resonators.

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